

WHAT IS CLAIMED IS:

1. An integrated oxide removal and processing system, comprising:

5 a process module operable to intentionally add at least one film layer to a single semiconductor wafer; and

10 a transfer chamber module used to align the semiconductor wafer for the process module, the transfer chamber module operable to expose the semiconductor wafer to a vaporous solution, the vaporous solution substantially inert with respect to the semiconductor wafer and operable to remove an interfacial oxide layer therefrom prior to or after the intentional addition of the at least one film layer.

15 2. The system of claim 1, wherein the semiconductor wafer comprises silicon.

20 3. The system of claim 1, wherein the oxide layer is a chemical oxide.

25 4. The system of claim 1, wherein the transfer chamber module comprises one of the group consisting of a synthetic resinous fluorine-containing polymer, polytetrafluoroethylene coating, and silicon carbide.

5. The system of claim 1, wherein the at least one film layer comprises one of the group consisting of SiO_2 , epitaxial Si, polysilicon, and nitride.

30 6. The system of claim 1, wherein the vaporous solution comprises HF.

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PATENT APPLICATION

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7. The system of claim 1, wherein the vaporous solution comprises .049% to 49% HF.

/ 8. An integrated oxide removal and transfer chamber, comprising:

5 a chamber operable to hold and align a single semiconductor wafer for presentation to a process module;

a wafer support enclosed within the chamber; and

10 a plurality of outlets operable to discharge an amount of a vaporous solution into the chamber, the vaporous solution substantially inert with respect to the wafer support and the semiconductor wafer and operable to remove an oxide layer from at least one surface of the semiconductor wafer.

15 9. The integrated oxide removal and transfer chamber of claim 8, wherein the chamber comprises one of the group consisting of a synthetic resinous fluorine-containing polymer, polytetrafluoroethylene coating, and silicon carbide.

20 10. The integrated oxide removal and transfer chamber of claim 8, wherein the semiconductor wafer comprises silicon.

25 11. The integrated oxide removal and transfer chamber of claim 8, wherein the wafer support is rotatable.

30 12. The integrated oxide removal and transfer chamber of claim 8, wherein the vaporous solution comprises HF.

13. The integrated oxide removal and transfer chamber of claim 8, wherein the vaporous solution comprises .049% to 49% HF.

14. A method for integrating oxide removal from a semiconductor wafer and processing thereof, comprising:

5 exposing a single semiconductor wafer in a transfer chamber module to a vaporous solution substantially inert with respect to the semiconductor wafer;

removing the oxide layer from the semiconductor wafer with the vaporous solution; and

10 aligning the semiconductor wafer in the transfer chamber module for presentation to a process module.

15 15. The method of claim 14, further comprising:

automatically transferring the semiconductor wafer into the process module from the a transfer chamber module; and

intentionally adding at least one film layer to the semiconductor wafer in the process module.

20 16. The method of claim 14, wherein the vaporous solution comprises HF.

17. The method of claim 14, wherein the vaporous solution comprises .049% to 49% HF.

25 18. The method of claim 14, wherein the oxide is a chemical oxide.

19. The method of claim 14, wherein the semiconductor wafer comprises silicon.

20. The method of claim 14, wherein the at least one film layer comprises one of the group consisting of SiO_2 , epitaxial Si, polysilicon, and nitride.